Subject Code:- | B | C | A | T- | 2 | 0 | 5 | | | | |

Subject:- Computer Organization and Architecture

Roll No:- | | | | | | | | | | | |

TECNIA INSTITUTE OF ADVANCED STUDIES

BCA

Class Test (2025-2026)

Sem: 3rd **Shift – M & E** **Set - II**

Date: | | | | | | | | | **Time: -1:00 Hours** **Max. Marks: 30**

General Instructions:

- **All Questions are compulsory. Answers should be brief and to the point.**
- **It comprises three sections, A, B, and C. you are to attempt all the sections.**
- **Section A – Question No -1 is Very Short Answers type carrying 2 marks each. You are required to answer ALL.**
- **Section B- Question No-2 is Short Answers type question carrying 5 marks each. You are required to attempt any TWO out of THREE questions given.**
- **Section C- Question No -3 is Long Answer type question carrying 10 marks each. You need to attempt any one.**
- **Students are instructed to cross the blank sheets before handing over the answer sheet to the invigilator.**
- **No sheet should be left blank. Any written material after a blank sheet will not be evaluated /checked.**

			CO	BT	M
	SECTION –A				**(10)**
1.	**Attempt All of the following.**				**(5*2=10)**
	a.	What is Logic Gate? Give examples	**CO1**	**L1**	
	b.	State any two Basic Laws of Boolean Algebra?	**CO1**	**L1**	
	c.	What is Flip Flop?	**CO2**	**L1,L2**	
	d.	What is K-map?	**CO1**	**L1,L2**	
	e.	What is a Don't Care condition in Boolean simplification?	**CO2**	**L1,L2**	
	SECTION –B				
2.	**Answer any Two of the following**.				**(2*5=10)**
	a.	Explain the Multiplexer and De-Multiplexer with example.	**CO3**	**L2,L3**	
	b.	Explain SOP and POS forms with examples?	**CO3**	**L1,L2**	
	c.	Explain the operation of a 4-to-1 Multiplexer with a neat diagram?	**CO1**	**L1,L2,L3**	
	SECTION –C				
3.	**Answer any One of the following.**				**(1*10=10)**
	a.	Simplify the Boolean equation using K-map: F(A,B,C,D)= Σ(0,1,2,5,8,9,10,13).	**CO1**	**L1,L2,L3**	
	b.	Explain the working of a Half Adder and Full Adder with circuit diagrams?	**CO1**	**L1,L2,L3**	